

Using influence strategies to advance supplier delivery flexibility: The moderating roles of trust and shared vision

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ABSTRACT

This study explores trust and shared vision moderate the relationship between the manufacturer's influence strategies and supplier delivery flexibility. The major components of this study are based on reviews of marketing research that focus on influence strategies and literature regarding supply chain flexibility. The results show that the request strategy has a negative effect on supplier delivery flexibility. The model predicts that trust and shared vision have an asymmetrical effect across recommendations, information exchange, and promises influence strategies. When the relationship contains a highly shared vision, a manufacturer's use of the recommendation influence strongly promotes supplier delivery flexibility, whereas the use of a promise strategy depresses supplier delivery flexibility. In contrast, an information exchange strategy will have a negative effect, but the promise strategy will have a positive effect on supplier delivery flexibility when trust is high. This paper contributes to guidelines for management on how to align their suppliers for delivery flexibility to respond quickly to customer demands.

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1. Introduction

Delivery flexibility is the ability to adjust delivery dates and to accommodate rush and special orders (Beamon, 1999; Slack, 2005). Ketokivi (2006) indicated that delivery flexibility is the order winner over price. Mass customization needs supply chains to meet individual customer demands (Gong, 2008) and outsourcing trends motivate firms to explore supply management as a means to develop greater synergy (Liao, Hong, & Rao, 2010). The essential purpose for buyer and supplier relationship is to create value for customers (Anderson, 1995; Walter, Ritter, & Gemunden, 2001). In business marketing literature, delivery is regarded as a major criterion in supplier evaluation (Hutt & Speh, 2001) and relationship value (Ulaga, 2001). Slack (2005) argued that delivery flexibility becomes more important under increased competition in low volume and high variety customer demands. As supply chain management practices exceed the boundaries of a single firm, supplier delivery flexibility enhances the capabilities of the manufacturer to improve competitive advantage.

Influence strategies are 'compliance-gaining tactics' used to make targets achieve their desired actions (Frazier & Summers, 1984; Payan & McFarland, 2005). Most previous studies have focused on the relationships between influence strategies and power (Gelderman, Semeijn, & De Zoete, 2008; Hu & Sheu, 2005; Kale, 1986), satisfaction (Lai, 2007;

Sanzo et al., 2003), relationalism (Boyle, Robicheaux, & Simpson, 1992) and solidarity (Kim, 2000). Researchers have found that the choice of influence strategies has a significant effect on the trading relationship (Boyle & Dwyer, 1995; Frazier & Rody, 1991; Gelderman et al., 2008; Kumar, 2005). However, there are few influence strategies studies in supply chain management (e.g., Gelderman et al., 2008) and little is known about the effectiveness of influence strategies for promoting supplier delivery flexibility. Furthermore, the conditions where the link between influence strategies and supplier delivery flexibility is strengthened (or reduced) have not yet been explored clearly. Although manufacturing firms may use similar influence strategies, not all suppliers will react equivalently in the same position because of different social capital characteristics in interorganizational relationships. Social capital is a set of relational resources embedded in relationships. Nooteboom, Berger, and Noorderhaven (1997) suggested that trust is a belief that another party will cooperate without any coercion. Since many regard trust as a governance structure (Nooteboom et al., 1997; Zaheer, McEvily, & Perrone, 1998), this enhances the effectiveness of a transaction. Social capital theory argues that trust favors greater benefits of knowledge transfer and sharing of risks (Ireland & Webb, 2007) and trust enables the development of self-enforcing or implicit contracts (Dyer & Singh, 1998; Telser, 1980). In addition, shared vision, as a bounding mechanism for organizational resource exchange and integration (Tsai & Ghoshal, 1998), provides organizational members a sense of purpose and direction, embodies the common value of dyadic relationships, and helps to hold together a loosely-coupled system (Wang & Rafiq, 2009). Partners with shared vision can facilitate the pursuit of collective goals. Trust and shared vision may be critical factors as they form a situation conducive to supplier flexibility.

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Few studies on influence strategies have discussed the moderating role in the relationship between influence strategies and supplier delivery flexibility. Therefore, the central research question focuses on how trust and shared vision moderate the relationship between the manufacturer's influence strategies and supplier delivery flexibility.

This study makes several contributions. First, this study divides influence strategies into three categories: hard coercive influence strategies (i.e. threats, legalistic pleas, and promises), request strategy, and noncoercive strategies (i.e. recommendations and information exchange). We separate the request strategy from noncoercive influence strategies. This is because that request strategy is not merely a suggestion and is based on an inferred argument rather than inferred sanctions (Frazier & Summers, 1986; Payan & McFarland, 2005). Second, this study is to provide new perspectives in examining under what conditions influence strategies can promote supplier delivery flexibility. For a decision to be effective, an organization must match its structure to its contingent factors and thus, to its environment (Galbraith, 1973). Based on contingency theory, we argue that the effectiveness of a firm's influence strategies on supplier flexibility depends on the firm's ability to match appropriate trust and shared vision with influence strategies, because suppliers respond differently to various social exchange systems. This study extends the framework of Payan and McFarland (2005) to explore how coercive, requests, and noncoercive strategies effect on supplier delivery flexibility and how trust and shared vision exert distinct effect associated with influence strategies and affect supplier delivery flexibility. On the other hand, although influence strategies and social mechanisms (i.e. trust and shared vision) are tools with which manufacturers can influence the behavior of the supplier in buyer–supplier relationships, little is known on the interaction effects of influence–control mechanism–complementarities or substitution effects—between influence strategies and social mechanisms used to advance supplier delivery flexibility. Payan and McFarland (2005) argued that the use of coercive influence strategies is ineffective at lower levels of dependence. We suggest that when parties in exchange relationships have trust and shared vision, the influence strategy a manufacturer chooses might result in an effective approach to supplier delivery flexibility. Finally, an examination of influence strategies in Chinese societies, whose values differ from those typically found in a Western context, should enhance our understanding of influence strategy effectiveness. Much of research on influence strategies has been conducted in Western context. However, it is unclear whether results from prior studies conducted in the West would hold in the Eastern context. We conduct the study in Taiwan, a society with relatively high-context. High-context cultures such as Taiwan, China, and Japan emphasize a mutual sense of care and view communication as a means to promote smooth, harmonious relationships (Hall & Hall, 1990; Kim, Pan, & Park, 1998). In such a cultural context, information exchange and recommendations are likely to be particularly important. Therefore, we provide an ideal setting in which to test the effects of influence strategies and the moderating role of social mechanisms on supplier delivery flexibility. This research not only contributes to filling the existing theoretical gap but also provides insights into the more effective management of buyer–supplier relationships.

We organize this paper as follows: first, this study reviews the literature on influence strategies, delivery flexibility, and social mechanisms, as the basis for presenting the conceptual framework. The next section contains the development of specific hypotheses. The last section reveals the research findings, states the research conclusion, and addresses the theoretical and managerial implications of this study. It includes discussions regarding the study's limitations and suggestions for future research.

2. Theoretical foundation

2.1. Delivery flexibility

Delivery flexibility is the ability to change the product mix and to reallocate its capacity to accommodate customer rush or special

orders (Cheng, Simmons, & Ritchie, 1997). Ketokivi (2006, p. 220) defined delivery flexibility, “as the ability to accommodate last-minute changes to order quantities, small-batch deliveries, fast deliveries, and higher on-time delivery rates.” As the elements of delivery flexibility, reliability and dependability represent key components of agility performance of firms (Paulraj & Chen, 2007). Delivery reliability refers to the ability to deliver on or before the promised scheduled due date (Handfield & Pannesi, 1992). Delivery dependability refers to the ability to deliver on time with accurate quantities and the products needed (White, 1996). In addition, Slack (2005, p. 1193) claimed, “Volume and delivery flexibility seemed to be interchangeable to some extent”. Oke (2005) indicated that delivery flexibility is the consequence of volume and mix flexibility. Volume flexibility is the ability to adjust aggregate production in response to customer demands effectively (Hayes & Wheelwright, 1984). Mix flexibility refers to the ability to change various products produced within a given period, economically and effectively without incurring major set-up costs (Das, 2001; Slack, 2005). Therefore, a manufacturer with the ability to operate at different output levels, quickly and easily changes the quantities for production, quickly adapts to a different product mix, or produces various products without a major changeover can be more responsive to customer demands and deliver on the promised due date.

In the past, the market demand was more stable and the product life cycle was longer. Today, the market demand and customer preferences are not as easy to predict. Manufacturers should have the ability to change planned delivery dates for meeting customer requirements. Due to the trend of supplier consolidation in supply chain management, this has become increasingly important for manufacturers to uphold supplier delivery flexibility to maintain competitive advantage. A customer-oriented manufacturer should have the ability to adjust supply to match customer demands and to offer a large variety of products simultaneously. For manufacturers to stay profitable, it is necessary to meet customer demands without adding significant costs (Gilmore & Pine, 1997). Ndubisi et al. (2005) showed that the supplier management strategies adopted by the manufacturer would help the manufacturer's flexibility to meet customer needs. Therefore, suppliers with the ability to deliver on the promised due date and adjust their capacity in response to the changes in demand are crucial for manufacturers. From the perspective of manufacturers, the supplier delivery flexibility significantly relates to the response to environmental uncertainty. In the literature, delivery flexibility not only encompasses delivery reliability and delivery dependability, but the ability to cater to changing orders quickly (Sawhney, 2006). If the supplier lacks the ability to accommodate rush orders and delivery on the promised due dates (Chan, 2003), the result is generally an increase in the manufacturer's additional cost (e.g. line down cost), and a negative customer value.

2.2. Influence strategies

As commonly defined by the literature on marketing, influence strategies are means of communication in that a source firm attempts to change or modify a channel partner's behavior. Frazier and Summers (1984, 1986) dichotomized influence strategies as either coercive (including legalistic pleas, threats, and promises), or noncoercive (including information exchange, recommendations, and requests). In coercive influence strategies, a source firm puts direct pressure on a target firm to perform a specific behavior by stressing noncompliance (Frazier & Rody, 1991). Past studies have empirically illustrated that coercive influence strategies have negative effects on dyadic relationships (Kim, 2000; Kumar, 2005; Sanzo et al., 2003). In addition, Brown, Grzeskowiak, and Dev (2009) found that the use of coercive influence strategies exacerbates opportunism. Conversely, noncoercive strategies primarily center on the beliefs and attitudes of the target firm and involve little direct pressure from the source firm. Frazier and Rody

(1991, p. 63) found that “suppliers with high power are likely being meaningful enough to use noncoercive strategies effectively.” Molla and Sanchez (1997) pointed out that noncoercive strategies (i.e. recommendations and information exchange) are the most prevalent and promises and requests are less preferable according to a survey of computer manufacturers in Spain. Venkatesh, Kohli, and Zaltman (1995) divided influence strategies into three categories from the coercive intensity perspective. These categories include hard coercive influence strategies (i.e. threats and legalistic pleas), soft coercive strategies (i.e., recommendations and promises), and noncoercive strategies (i.e., requests and information exchange). Lai (2009) divided influence strategies into three categories: (1) hard coercive strategies (including legalistic pleas and threats), (2) promise strategies, and (3) noncoercive strategies (including information exchange, recommendations, and requests).

2.2.1. Coercive influence strategies

1. Threats: the source threatens the target with future negative sanctions or punishments if the target does not comply with desired performance or behavior. Payan and McFarland (2005) measured the threats including, (1) penalties, (2) discontinuation of specific benefits, and (3) the loss of preferential status for noncompliance. For example, the buyer informs the supplier that if the supplier does not deliver on time, there will be negative consequences, such as no more future orders or a penalty for downtime. Researches show that threat strategy results in fewer positive outcomes (Falbe & Yukl, 1992; Scheer & Stern, 1992) and has less of an effect (Payan & Nevin, 2006) than other strategies.
2. Legalistic pleas: the source contends that a legal contract or agreement requires the compliance of the target. Gelderman et al. (2008) described that legalistic pleas strategy is a unique case of the threat strategy. The source cites the contract or agreement as the tool to require the target to perform a certain action. For instance, a manufacturer may remind suppliers that product delivery within the promised due date is in the contract.
3. Promises: the source offers specific rewards or incentives if the target conforms to the sources stated desires. However, if the target cannot comply with the source's demands, they will lose the rewards promised by the source (Venkatesh et al., 1995). Alternatively, not to categorize promise strategy as a coercive strategy remains a controversial topic in literature (c.f. Gundlach & Cadotte, 1994; Frazier & Rody, 1991). Ghijsen, Semeijn, and Ernstson (2010) claimed ‘direct strategy’ that includes threats, legalistic pleas, and promises that focus on directly changing the targets specific behavior by employing explicit or implicit rewards or punishments. Frazier and Rody (1991) argued that (1) promise strategy is a pressure applied on the target to perform a specific behavior, and (2) there are adverse consequences if they are non-compliant. In addition, noncompliance with the source's desired action considers the depreciated reward an equivalent to the imposition of the sanctions (Gelderman et al., 2008). Therefore, this study adopts the promise strategy as a coercive strategy.

2.2.2. Requests

The source simply informs the target to act without explanation (Gelderman et al., 2008) and directly implying the subsequent sanctions or rewards. Past studies often classified requests as a noncoercive strategy based on an inferred argument rather than inferred sanctions (Frazier & Summers, 1986; Payan & McFarland, 2005). In addition, request strategy is a form of communication for stating the desired action for the target to take, without specifically stating the consequences of the target's compliance or noncompliance. In contrast, Lai (2007) claimed that the request strategy explicitly states the desired actions and directly changes the target behavior. He indicated that the request strategy is more coercive than information exchange and recommendations because the targets (e.g. Taiwan car dealers) consider the request

strategy a command, and not merely a suggestion. Therefore, this study separates request strategy from noncoercive strategies.

2.2.3. Noncoercive influence strategies

1. Information exchange: the source supplies general business issues to alter the target's perspectives without stating a request or specific actions with the intent of motivating compliance. Payan and McFarland (2005) claimed that the information exchange strategy tries to alter the target's general perceptions and that the specific desired action remains vague. Boyle et al. (1992) suggested that the information exchange is essential to coordination. An example of an information exchange strategy, if the source says, “Many of suppliers have had great success with Just-in-Time (JIT) delivery.” The intention of the information exchange strategy is to convince the supplier to implement JIT delivery system; however this is not explicitly mentioned.
2. Recommendations: the source stresses that the target will be more profitable if the target achieves specific desired outcomes. Frazier and Summers (1984) indicated that recommendations strategy explicitly states the behavior to be performed by target. Recommendations strategy without offering specific explanations (Gelderman et al., 2008) focuses on the belief and attitudes of the target (Frazier & Rody, 1991). For example, the buyer may highlight that “deliver on time is beneficial to your operation.” Therefore, the recommendation strategy among noncoercive strategies is more focused or directive. If the source applies the recommendation strategy, it will help to nurture healthy relationships and increase economic and social satisfaction (Lai, 2007).

2.3. Social mechanisms

According to Nahapiet and Ghoshal (1998), social capital includes a structural (represented by network position), a relational (represented by trust), and a cognitive dimension (represented by shared vision between units). Inkpen and Tsang (2005) showed that there is substantial variance of knowledge transfer among three network types (i.e. intracorporate network, strategic alliance and industrial district). This study focuses on trust and shared vision because trust and shared vision are interrelated yet different aspects of relational resources, and are two psychological bonding mechanisms influencing the level of information sharing (Li, 2005).

2.3.1. Trust

Whitener, Brodt, Korsgaard, and Werner (1998) defined trust as the expectation or belief that the other party will act benevolently. In the literature of interorganizational relationships, trust exists when a party has confidence in the exchange partner's reliability and integrity (Gulati, Nohria, & Zaheer, 2000; Morgan & Hunt, 1994; Ring & Van de Ven, 1992). Zaheer et al. (1998) further defined trust as the expectation that the actor: (1) will be reliable to fulfill obligations; (2) will act and negotiate fairly; and (3) will behave in a predictable manner. A lack of trust will result in higher transaction costs (Beccerra & Gupta, 1999) such as scrutinizing and verifying the exchange behavior. The higher transaction costs will impede efficient and effective performance and further paralyze responsiveness (i.e., the ability to react to customer dynamic demand and deliver quickly). The issue of trust in manufacturer–supplier relationships is significantly important because the dyadic relationships often involve a high degree of interdependence. Anderson and Narus (1990, p. 45) defined trust, as “the belief that another company will perform actions that will result in positive outcomes for the firm, as well as not take actions that would result in negative outcomes for the firm”.

2.3.2. Shared vision

When the exchange parties have a shared vision, they have the same perception about how to integrate strategic resources and

how to interact with each other. Shared vision can reinforce the manufacturer–supplier relationships, and a manufacturer can utilize it as the supplier selection criterion (Kamann & Bakker, 2004). Tsai and Ghoshal (1998) declared that a shared vision embodies the collective goals and aspirations of the members of an organization. Empirical studies show that parties in the supply chain with shared vision have better performance (e.g., Spekman, Kamauff, & Spear, 1999). Boddy, Macbeth, and Wagner (2000) found that a lack of shared vision between suppliers and customers causes difficulty in cooperation. Li (2005) claimed that shared vision as a social mechanism facilitates cooperative actions.

3. Hypotheses development

Fig. 1 provides a pictorial representation of the hypotheses. In this study, we extend the framework of Payan and McFarland (2005) to develop hypotheses. Based on a theoretical framework of influence strategies effectiveness, we suggest that promises result in supplier delivery flexibility only when the source highly trusts in the target, that request strategy is more or less effective only when target has high level of correct inferences, and that noncoercive influence strategies (recommendations and information exchange) are more or less effective only when source and target have high level of shared vision. We depict this theoretical framework in Fig. 2.

3.1. Coercive influence strategies and delivery flexibility

In regards to coercive influence strategies, a manufacturer may threaten its suppliers that nonconformity to adjusted delivery dates will cause the suppliers to lose future business opportunities. A manufacturer may use obligations within the purchasing agreement to claim suppliers to comply with adjusted orders. Threats and legalistic pleas might result in negative consequences if targets fail to comply with the source (Venkatesh et al., 1995). According to Payan and McFarland's (2005) argument, coercive influence strategies are effective only if the target perceives itself to be highly dependent on a source firm. Their findings also suggested that threats are tenable when the target of influence is highly dependent on the source and that promises are totally ineffective.

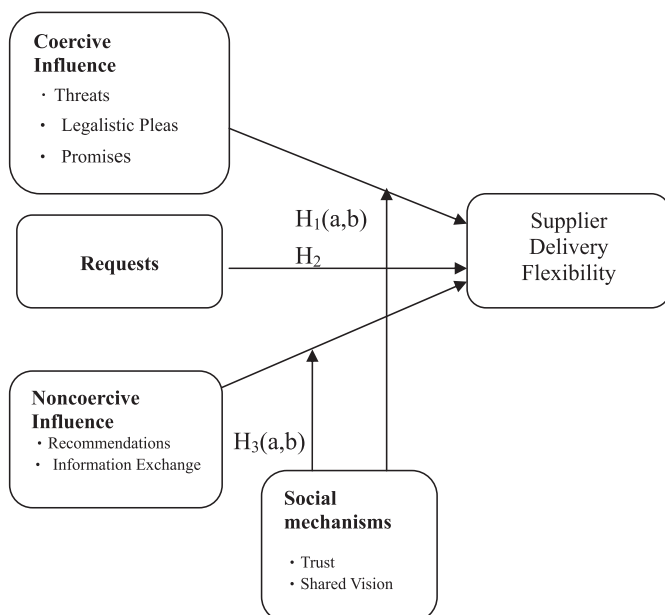


Fig. 1. Effects of influence strategies and social mechanisms on supplier delivery flexibility: A.

In the supply chain, manufacturers not only need their suppliers products, but for them to respond quickly. When unforeseen circumstances occur, manufacturers and suppliers need to apply high levels of cooperation and joint planning to achieve the delivery flexibility required in the supply chain. If a manufacturer believes that its supplier is trustworthy in dealing with their transaction, the manufacturer may not resort to threats and legalistic pleas to enforce compliance. In contrast, promise strategy refers to a target's perception of a positive sanction (Payan & Nevin, 2006), such as rewards if the target complies with the source (Venkatesh et al., 1995). Under trusting circumstances, a manufacturer believes that suppliers will tend to keep their promises and satisfy their needs. We suggest that trust increases the buyer's willingness to take additional risks and provide more reward to motivate supplier delivery flexibility. If a manufacturer adopts the promise strategy, the inspiration of reward will enhance the willingness of suppliers to comply with delivery flexibility. Therefore, the effectiveness of the promise strategy in advancing supplier delivery flexibility depends on the level of trust in suppliers. The above argument leads to:

H1(a). Promises strategy will have a strong positive relationship with supplier delivery flexibility when trust is high than when trust is low.

In regards to promises strategy, Venkatesh et al. (1995) claimed that promises strategy is less coercive than threats and legalistic pleas. Frazier and Summers (1984) argued that promises strategy increases the changing base of power from reward to referent. Manufacturers and suppliers with shared vision will gain a wider perspective of the long-term orientation (Ganesan, 1994; Lusch & Brown, 1996). Under a high-level shared vision, parties will expect to maintain long-term cooperative relationships. Using the promise strategy makes suppliers feel strained with inference to the manufacture's increasing power and further coming sanction or punishment. Coordination with the manufacturer facilitates supplier delivery flexibility that involves suppliers' operation decisions. The promise strategy draws on reward power (French & Raven, 1959) and may induce a supplier to focus on the short-term outcome (Boyle et al., 1992). In the face of various rush orders, the supplier may prefer to expedite other profitable orders if the supplier regards its dyadic relationship as unhealthy. The promise strategy will have a negative impact on the maintenance of the cooperative relationship. Therefore, this paper proposes the following hypothesis:

H1(b). Promise strategy will have a strong negative relationship with supplier delivery flexibility when shared vision is high than when shared vision is low.

3.2. Request strategy and delivery flexibility

Frazier and Summers (1984) indicated that request strategy attempts to influence the target behavior directly. The effectiveness of request strategy will be in situations in that the value to the target of its compliance significantly exceeds the corresponding costs. A manufacturer may communicate content with the supplier to change a supplier's perceptions, but the content may lack any explanation. Payan and McFarland (2005) claimed that the strong arguments have higher levels of compliance than weak arguments. A manufacturer informs its desired actions to the suppliers without explanation or statement of consequence. The manufacturer's argument is generally specific and strong. However, if the supplier does not comply, the supplier may infer to the manufacturer's request strategy accompanied with a sanction (Payan & McFarland, 2005). A manufacturer that uses request strategy inevitably causes supplier tension. In delivery flexibility, a supplier needs to adjust production plans to accommodate for rush orders or to deliver accurate quantities on the promised due date. Continuous coordination should exist between manufacturers and suppliers. When the supplier initiate an incorrect

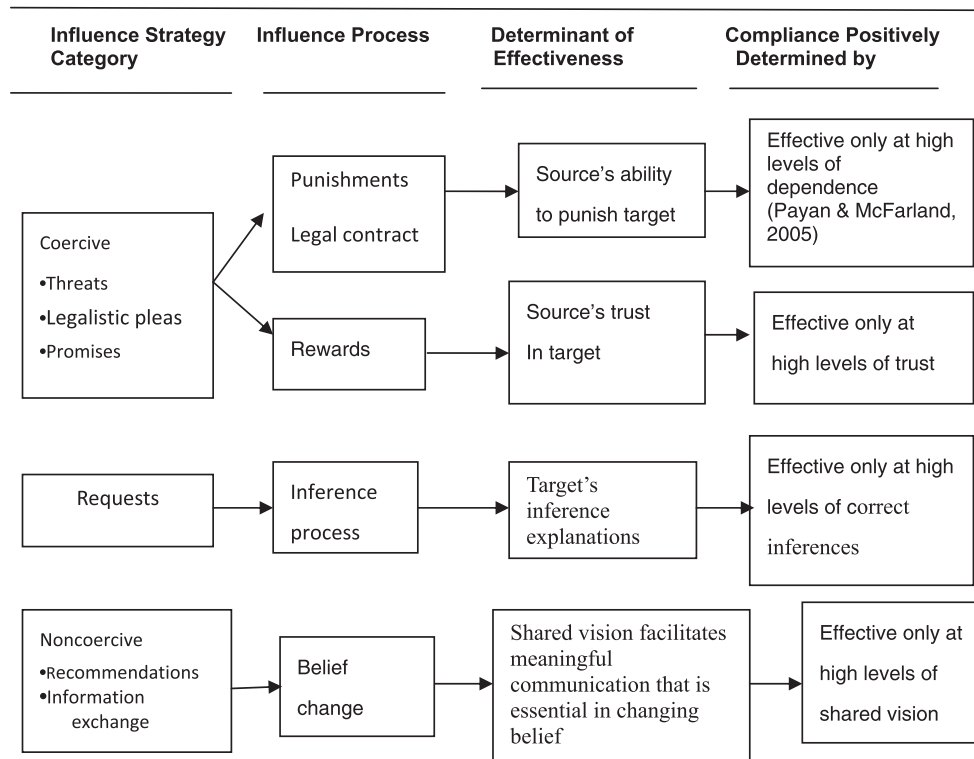


Fig. 2. Theoretical framework of influence strategy effectiveness.

inference process, the infer explanations for the request may negatively impact supplier delivery flexibility. In addition, as Payan and Nevin (2006) stated, if the supplier perceives that request implementation will take a sizable amount of time, effort, or resources, the supplier will be more resistant to the request. Ultimately, the supplier feels anxious and frustrated (Frazier & Rody, 1991). The consequence of the request strategy will damage the relationship between manufacturer and supplier, and as a result, will compress suppliers' compliance. This argument leads to:

H2. The effect of the request strategy negatively impacts a supplier's compliance with delivery flexibility.

3.3. Noncoercive influence strategies and delivery flexibility

Noncoercive influence strategies are means of communication intended to change the belief or aspiration of another party. The noncoercive influence strategies include recommendations and information exchange to attempt to alter the target's perception and change its belief. Regarding delivery flexibility, suppliers need to make capital expenditures on capacity expansion or initiate skilled worker training. However, the information exchange and recommendations strategies have an incomplete argument structure (Payan & McFarland, 2005) and less pressure. A manufacturer with a high-perceived level of trust has more confidence that the suppliers will act honestly. In the manufacturer–supplier dyadic relationships, if the manufacturer has a high-level of trust in its supplier, it may decrease the surveillance of its supplier's exchange behavior. To achieve the delivery flexibility requirement, suppliers need to become more involved and take riskier actions (e.g. building inventory buffers). Brown et al. (2009) found that noncoercive influence strategies exert less pressure could not prevent suppliers from behaving opportunistically. Under competitive pressure, suppliers may decide to serve their own optimal interests and take risk-aversion action when faced

with various rush orders from the manufacturer. Accordingly, the consequence will mitigate supplier's willingness to comply with the manufacturer. Therefore, we hypothesize that:

H3(a). (1) Recommendations and (2) information exchange strategies will have a strong negative relationship with supplier delivery flexibility when trust is high than when trust is low.

A manufacturer may predict that the supplier will be more profitable if it follows the manufacturer's suggestions (i.e. recommendations), or simply discusses general issues with the intent of motivating compliance (i.e. information exchange) (Frazier & Summers, 1986; Payan & McFarland, 2005). When considering delivery flexibility, a manufacturer needs its suppliers to quickly respond and comply with changing market demands. Lai (2007) considered recommendations and information exchange strategies to be perception-altered strategies that focus on beliefs and attitudes of the target without a specific explanation. A manufacturer that frequently uses recommendations and information exchange as tools to change the supplier's perception will experience positive cooperative network relationships.

Considering the changing environment and necessity for a quick response to dynamic customer demands, shared vision is the prerequisite of supply chain partnerships. Without a shared vision between the manufacturer and supplier, the exchange partners may promote their own interests at the expense of the other partners. In a shared vision approach, manufacturers and suppliers believe they are on the same team and share a commitment based on mutual benefit. Therefore, a manufacturer's noncoercive influence strategies can easily alter suppliers' perception toward the common goal. Under this condition, suppliers have a clear understanding of the supply chain mutual goals and will have a strong intention to take action to meet the manufacturer's delivery flexibility requirements. Therefore, this paper hypothesizes that:

H3(b). (1) Recommendations and (2) information exchange strategies will have a strong positive relationship with supplier delivery flexibility when shared vision is high than when shared vision is low.

4. Methodology

4.1. Measures

The measurements for each construct in this study are listed in the Appendix. Informants responded to five-point Likert-type scales for all variables from 'strongly disagree' (1) to 'strongly agree' (5).

4.1.1. Influence strategies

Frazier and Summers (1984, 1986) used a single-item scale to measure influence strategy and asked informants to estimate the percentage of source firm representatives tried to influence. McIver and Carmines (1981, p. 15) claimed, "It is very unlikely that a single item can fully represent a complex theoretical concept or any specific attribute for that matter". Thus, this study adapted and modified the influence strategies outline developed by Boyle et al. (1992). For coercive influence strategies, informants were asked about the extent which the manufacturer used promises (PR), threats (THT), and legalistic pleas (LP) and noncoercive strategies about recommendations (REM), information exchange (IE), and request strategy (RQ). Thus, there were 15 items for coercive strategies, 8 items for noncoercive strategies and 4 items for requests subscale.

4.1.2. Delivery flexibility

In the measurements of delivery flexibility, we modified the measurements in reference to related researches (Chan, 2003; Duclos, Vokurka, & Lummus, 2003; Krause, Pagell, & Curkovic, 2001; Sawhney, 2006). There are 5 items for delivery flexibility subscale.

4.1.3. Trust and shared vision

To examine the interaction effect of trust (TRST) and shared vision (SHV), we further employ the construct from prior researches (e.g. trust taken from Kumar, Scheer, & Steenkamp, 1995; Kozak & Cohen, 1997; Spekman et al., 1999 and shared vision from Li & Lin, 2006). There are 9 items for trust and 3 items for shared vision.

4.1.4. Control variables

Size of the manufacturer was measured by employee headcounts 1—more than 1000 and 0—less than 1000. Duration (DUR) was measured by more than 10 years of cooperative experience with 1 and less than 10 years with 0. In regard to industry type (IND) measurement, 1 represented high-tech firms and 0 represented traditional manufacturing firms.

4.2. Sample and data collection

This research investigated the relationship among influence strategies, social mechanisms and supplier delivery flexibility. A questionnaire was pretested with 25 middle or top managers from different companies not included in the final study. Based on their responses, several questions were eliminated and reworded. All the items adapted from English scale were translated into Chinese. The revised survey questionnaires were sent out to 1000 members chosen at random from among the 5000 membership of SMIT (Supply Management Institute, Taiwan) which is an institute for purchasing management certification (e.g. Certified Purchasing Professional and Certified Purchasing Manager) training. The subjects were the purchasing managers of manufacturers who are in charge of transactions with suppliers. Purchasing managers were selected as they are often the main point of interaction with their firm's suppliers. Participants were asked to select one important supply relationship and to answer all questions referring to this one

supplier. The reasons for choosing the Taiwanese manufacturers at the target samples for the questionnaire survey are summarized as follows. First, there were few studies on influence strategies focused on Taiwanese firms (e.g. Hu & Sheu, 2005; Lai, 2007, 2009). Previous studies focus on the marketing research instead of operation and production side. Second, due to higher manufacturing costs, efficacy disadvantages and non-core technologies, Taiwanese manufacturing firms support Original Equipment Manufacturer (OEM) components for large corporations (e.g. Apple, HP, Nokia, and Nike). Most of those Taiwanese manufacturing firms tightly cooperate with their suppliers to achieve those large corporations requirement. Third, Taiwanese culture is rated as relatively high on the dimensions of collectivism and long-term orientation, and also scored as high-context culture as determined by Hall and Hall's (1990) cultural dimensions. Therefore, there may be significant interest-induced interaction in the corresponding manufacturer–supplier relationships, which may help to investigate the interrelationships between social mechanisms and influence strategies, as well as the corresponding effects on delivery flexibility.

After 2 weeks of initial mailing, we sent the follow-up mail to non-respondent with a copy of questionnaire. As a result, 128 returns were received out of 1000 questionnaires (12.8%). Of these, 6 were removed for incompleteness, yielding a final sample size of 122 (12.2%). Rutner and Gibson (2001) reported an expected response rate of 5.7% on the data collection by "e-mail-out-e-mail return" method. In addition, their study on logistics information systems survey that different survey techniques yielded different rate of return ranging from 3.7% to 12.6%. Namely, our survey return rate was acceptable from E-mail survey method and supply chain targets. We compared the response group before and after the follow-up mail, and there were no significant differences in terms of cooperative duration relationship with key suppliers and number of employees. Table 1 presents characteristics of our final samples.

4.3. Reliability and validity

This study conducted an exploratory factor analysis on the influence strategies, social mechanisms and delivery flexibility measures. On the basis of a baseline Eigenvalue of 1.0, Table 2 showed that all measures have a good factor structure. In examining all constructs, the minimum Cronbach's alpha was .618 (promises strategy) and the maximum Cronbach's alpha was .936 (shared vision). Only promises and information exchange strategies do not meet Cronbach's alpha of 0.7 cut off recommended by Nunnally and Bernstein (1994) but all items reached the basic threshold for reliability (Cronbach's alpha > .6; Sakakibara et al., 1997). We further tested the validity of construct measures by confirmatory factor analysis (CFA) of all first-order constructs (Gerbing & Anderson, 1988). The reliability for all scales all exceeds the following criteria composite reliability (CR) > .70 (Fornell & Larcker, 1981), and average variance extracted (AVE) > .50 (Anderson & Gerbing, 1988; Fornell & Larcker, 1981; Hair, Anderson, Tatham, & Black, 1998). All the variables are successfully measured, and the statistics summary and correlation matrix are presented in Table 3. According to Hair et al. (1998), for confirmatory

Table 1
Characteristics of informants' firms.

Characteristics	Number in sample	Percentage
Industry		
High-tech manufacturing	64	52.46
Traditional manufacturing	58	47.54
Number of employees		
< 1000	68	55.74
> 1000	54	44.26
Relation duration with supplier		
< 10 years	59	48.36
> 10 years	63	51.64

Table 2
Exploratory factor analysis of construct.

Items	Factors	
	Loadings	Cronbach's alpha
Delivery flexibility		0.807
DLV1	0.722	
DLV2	0.834	
DLV4	0.668	
DLV5	0.831	
Threats		0.817
THT4	0.799	
THT5	0.831	
THT6	0.868	
Legal pleas		0.850
LP1	0.861	
LP2	0.798	
LP3	0.825	
LP4	0.755	
Promises		0.618
PR1	0.620	
PR3	0.839	
Requests		0.838
RQ1	0.860	
RQ2	0.806	
RQ3	0.850	
Information exchanges		0.625
IE1	0.832	
IE2	0.650	
Recommendations		0.917
REM1	0.874	
REM2	0.891	
REM3	0.845	
REM4	0.828	
Trust		0.894
TRST4	0.884	
TRST5	0.883	
TRST6	0.836	
Shared vision		0.936
SHV1	0.798	
SHV2	0.868	
SHV3	0.864	

factor analysis (CFA), it is recommended that the data set must meet at least five observations per estimated parameter threshold. Because the sample sizes are not large in this study, we estimated two measurement models respectively: the first for influence strategies, and the second for social mechanisms (trust and shared vision). A six-factor (recommendations, information exchange, requests, legalistic pleas, promises and threats) and 3-factor (trust, shared vision

and delivery flexibility) confirmatory factor analyses were used to estimate the goodness-of-fit. Model fit exceeded the standard cutoffs for acceptable fit: trust, shared vision and delivery flexibility ($\chi^2(24) = 32.95, p > 0.05$; root mean square error of approximation (RMSEA) = 0.018; root mean square residual (RMR) = 0.056; comparative fit index (CFI) = 0.988; Tucker and Lewis index (TLI) = 0.982) and trust, shared vision and delivery flexibility influence strategies ($\chi^2(109) = 125.1, p > 0.05$; RMSEA = 0.035; RMR = 0.045; CFI = 0.984; TLI = 0.978). From the result of CFA factor loadings, the magnitudes of the factor loadings and levels of statistical significance provide evidence of the measures convergent validity. Finally, we used the AVE exceeded 0.5 as the criterion to assess discriminant validity (Fornell & Larcker, 1981). Table 3 also showed that all AVE exceeded the squared correlation between any pair of constructs support a satisfactory level of discriminant validity.

5. Results

This study used hierarchical multiple regressions to test the hypotheses (Cohen et al., 2003). To avoid problems with multicollinearity, we mean-centered the independent variables, as Cohen et al. (2003) recommended. To test the control variables effects, we entered the control variables in the first stage. In the second stage, we entered the main effects of individual coercive, noncoercive and request strategies into the model. To test the interaction hypotheses, we conducted an interaction regression in the third stage in which the interaction was conducted among trust, shared vision, promises, information exchange and recommendations strategies respectively. Following the above steps, there are three models in the regression results shown in Table 4. To test H₂, we conducted a main effect model, which we specified in Table 4 Model 2. To test H₁ and H₃, we specified an interaction model in Model 3.

In Table 4, Model 2 accounts for 29.5% of the variance in delivery flexibility ($F(11, 109) = 4.15, p < .01$). The standardized regression coefficients indicated that requests has a negative effect on supplier delivery flexibility (standardized $\beta = -.176, t\text{-value} = -1.971, p < .05$). Thus, H₂ was supported. The results also imply social mechanisms account for the primary impact on supplier delivery flexibility. In regard to promises, the interaction item of promise \times trust showed positively significantly positive (standardized $\beta = .298, t\text{-value} = 2.214, p < .05$). In contrast, the promises \times shared vision (standardized $\beta = -.311, t\text{-value} = -2.328, p < .05$) indicated a negative effect on delivery flexibility. In Model 3, the interaction item information exchange \times trust (standardized $\beta = -.157, t\text{-value} = -1.691, p < .1$) is negatively significant. The interaction between shared vision and recommendation

Table 3
Correlation matrix and summary statistics.

	DLV	THT	LP	PR	RQ	IE	REM	TRST	SHV
DLV	1.00								
THT	-0.037	1.00							
LP	0.012	.334**	1.00						
PR	0.16	0.166	0.029	1.00					
RQ	-.238**	0.14	.228*	-0.146	1.00				
IE	0.172	-0.084	0.032	.324**	-0.143	1.00			
REM	0.167	0.117	0.147	-0.146	-0.14	.340**	1.00		
TRST	.324**	-0.070	0.089	0.055	-0.104	.250**	.237**	1.00	
SHV	.410**	-0.120	0.007	.189*	-.306**	.403**	.367**	.445**	1.00
Mean	3.922	3.123	3.387	3.488	2.443	3.467	4.125	3.918	4.016
Standard deviation	0.459	0.820	0.748	0.691	0.791	0.700	0.599	0.492	0.665
AVE	0.588	0.694	0.657	0.544	0.704	0.557	0.739	0.753	0.712
Cronbach's alpha	0.807	0.817	0.850	0.618	0.838	0.625	0.917	0.894	0.936
Composite reliability	0.850	0.872	0.884	0.700	0.877	0.713	0.919	0.902	0.881

Notes: DLV = delivery flexibility; THT = threats; LP = legal pleas; PR = promises; RQ = requests; IE = information exchanges; REM = recommendations; TRST = trust; SHV = shared vision.

** Correlation is significant at the 0.01 level (two-tailed).

* Correlation is significant at the 0.05 level (two-tailed).

Table 4
Results of multiple regression analyses.

Dependent variable	Delivery flexibility					
	(Model 1)		(Model 2)		(Model 3)	
	Standardized β	t-value	Standardized β	t-value	Standardized β	t-value
<i>Control variables</i>						
IND	0.200**	2.148	0.292**	3.356	0.279**	3.224
Size	0.033	0.352	0.116	1.337	0.132	1.558
DUR	0.019	0.210	-0.008	-0.097	0.002	0.027
<i>Main effects</i>						
THT			0.031	0.342	0.022	0.232
LP			0.041	0.458	0.021	0.233
PR			0.102	1.106	0.024	0.227
RQ			-0.176**	-1.971	-0.179**	-2.005
IE			-0.016	-0.162	0.002	0.025
REM			-0.084	-0.851	-0.029	-0.284
TRST			0.208**	2.256	0.224**	2.436
SHV			0.320**	3.109	0.284**	2.752
<i>Interaction effects</i>						
TRST \times PR					0.298**	2.214
SHV \times PR					-0.311**	-2.328
TRST \times REM					-0.245**	-2.500
TRST \times IE					-0.157 ⁺	-1.691
SHV \times REM					0.263**	2.590
SHV \times IE					0.147	1.465
R ²	0.040		0.295		0.378	
Adjusted R ²	0.015		0.224		0.275	
F-statistic	1.626		4.15***		3.678***	

Notes: DLV = delivery flexibility; THT = threats; LP = legal pleas; PR = promises; RQ = requests; IE = information exchanges; REM = recommendations; TRST = trust; SHV = shared vision.

⁺ p<0.1.
** p<0.05.
***p<0.01.

strategy presented recommendations \times shared vision (standardized $\beta = .263$, t-value = 2.59, p<.05) is positively significant. The recommendations \times trust (standardized $\beta = -.245$, t-value = -2.5, p<.05) indicated a negative effect on delivery flexibility. Following the above statistic results, H_{1(a)}, H_{1(b)}, H₂, and H_{3(a)} are all supported but H_{3(b)} is partially supported. Our results showed that trust and promise strategy interact to positively impact delivery flexibility but trust and noncoercive strategies interact to negatively impact

flexibility. In contrast, the interaction between shared vision and recommendations has positive impact on delivery flexibility, while the interaction with promises presents a negative impact. Finally, size and duration as the control variables, revealed no significant effect on dependent variable. However, the industry shows a significantly positive effect on delivery flexibility in Model 2 and Model 3. The results imply high-technology industries require more supplier delivery flexibility than do traditional manufacturing industries (Fig. 3).

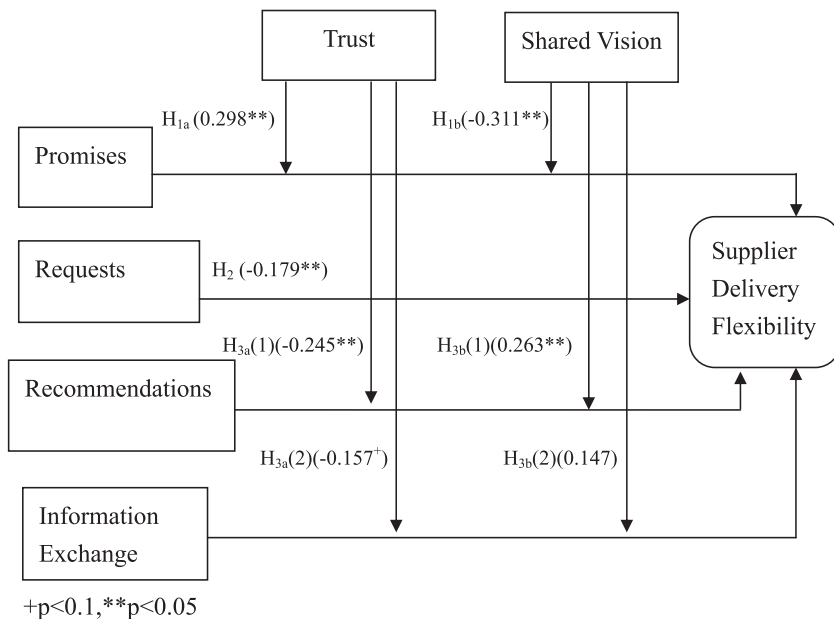


Fig. 3. Model of the effects of influence strategies and social mechanisms on delivery flexibility and outcome.

6. Discussion and suggestions

6.1. Discussion

This study explores trust and shared vision moderate the relationship between the manufacturer's influence strategies and supplier delivery flexibility in the buyer–supplier relationships with the integration influence strategies and social capital theory. For promises, the results show that promise strategy doesn't have significantly positive impact on supplier delivery flexibility. In particular, the effectiveness of the promise strategy in advancing supplier delivery flexibility depends on the level of trust in suppliers. Trust building involves a mutual reciprocation of beneficial actions through manifold interaction over time (Blau, 1964; Homans, 1958). The basic assumption of the social exchange theory is that “parties enter into and maintain relationships with the expectation that doing so will be rewarding” (Blau, 1964; Homans, 1958; Lambe, Wittmann, & Spekman, 2001, p. 4). Using the promise strategy will increase economic satisfaction because the source offers reward to encourage the target's compliance (Busch, 1980; Wilkinson, 1979). Therefore, only after the establishment of a high-level of trust with the suppliers does the promise strategy appear effective. However, if the manufacturer and supplier have a high-level of shared vision, they are more willing to generate synchronized activities and to invest in long-term relationships (Jarillo, 1988; Jarillo & Ricart, 1987). Therefore, the use of the promise strategy under a high-level of shared vision may change the supplier's mind-set as unbalanced power base and reduce the willingness to coordinate with the manufacturer to achieve delivery flexibility.

Additionally, this study separates the request strategy from non-coercive influence strategies (Lai, 2007). As expected, the request strategy exacerbates supplier delivery flexibility. The reason for this is that suppliers see request strategy as a command that spoils cooperative relationships. This causes the supplier to behave in a manner opposite of what the manufacturer desires. According to Fu et al. (2004, p. 286), persuasive strategy includes ‘rational persuasion’ (using logical arguments) and ‘consultation’ (seeking the targets input or participation in task). The request strategy is a strong and specific communication tool to seek the target's desired actions. Therefore, this study considers request strategy to be a persuasive strategy. In addition, the uncertainty avoidance dimension of cultural differences may be particularly important in this study. Taiwanese culture has a high uncertainty avoidance structure (Schmidt & Yeh, 1992) in situations where people “feel threatened by uncertainty or unknown situations” (Hofstede, 1997, p. 113) and lowers people's confidence in influencing others through logical arguments. In a high uncertainty avoidance culture, people perceive persuasive strategies as ineffective (Fu et al., 2004). Therefore, using the request strategy causes a negative impact on supplier delivery flexibility.

Our research involved the moderating effects of social mechanisms on the use of the noncoercive influence strategies. The significant interaction between shared vision and the recommendations strategy sheds additional light on the efficacy of the recommendations strategy on supplier delivery flexibility. The recommendation strategy explicitly communicates to the target with specific desired actions (Heide & John, 1990). Delivery flexibility requires the coordination of dyadic production plans and the ability to adjust operations. Shared vision facilitates the pursuit common goals between the manufacturer and supplier. When firms have a high-level of shared vision, using the recommendation strategy may drive the supplier toward compliance to achieve compatible goals. According to the argument structure theory, the influence strategies with complete argument structure are more effective than influence strategies with a less complete argument structure (Payan & McFarland, 2005). In addition, the information exchange strategy has a less complete structure is an unfocused strategy. Therefore, the information exchange strategy with shared vision shows no significant effect on a supplier's compliance.

Interestingly, the interaction between trust and information exchange strategy displays a negative effect on supplier delivery flexibility. Das and Teng (1998) defined trust as a positive expectation regarding the target's motive, and should not influence the target's behavior. To meet customer demands by using information exchange strategy without further reward and surveillance of suppliers seems ineffective since the suppliers may act to protect their own interests under competitive pressure. Additionally, there is a negative interaction effect between trust and recommendations, suggesting that recommendations lead to low supplier delivery flexibility under high level of trust. This might occur because of the “dark side” of social capital in buyer–supplier relationships (Villena, Revilla, & Choi, 2010). Villena et al. (2010) claimed that, as relational capital increases, it can create occasions for opportunistic behavior (Granovetter, 1985). Excessive levels of trust may lead the buyer to reduce its efforts of monitoring and put the supplier in a better position to take greater advantage of the buyer. Therefore, using the recommendations strategy associated with trust may lead to a supplier's adverse actions.

6.2. Theoretical implications

The theoretical implications of this study are as follows. First, this study offers important contributions to the literature, not only because previous research only focused on the influence strategies and ignored the nature of the request strategy, but more importantly because the social mechanisms have a stronger impact on compliance than the unique influence strategy. By integrating influence strategies and social capital theory, this study adds to our understanding of the complex nature of supplier delivery flexibility. The results offer new insights into the interaction effects of influence-control mechanism—complementarities or substitution effects—between influence strategies and social mechanisms used to advance supplier delivery flexibility. The results show that promises with trust, and recommendations with shared vision have a complementary effect, and that information exchange and recommendations respectively with trust, and promises with shared vision have a substitutive effect on supplier delivery flexibility.

Second, this study extends Payan and McFarland's (2005) work and explores the determinants of supplier delivery flexibility in the buyer–supplier relationships. Payan and McFarland (2005) investigated the effectiveness of influence strategies by drawing on argument structure theory from the consumer behavior literature and on dependence theory from the marketing channels literature. According to argumentation theory, influence strategies reliant on changing the target's perception will be more effective if the communicated content has a more complete argument structure. Therefore, if the communicated content lack of a complete argument structure, the target's perception will not be changed. In addition, if the target perceives itself to be highly dependent on a source and the source attempts to communicate that it will apply sanctions in an influence attempt (i.e., threats or legalistic pleas), the effect on compliance will be amplified (Payan & McFarland, 2005). However, they found that the interaction between promises and dependence on compliance is not significant. Drawing on social capital theory, we argue that trust increases the buyer's willingness to take additional risks and provide more rewards to motivate supplier delivery flexibility. Therefore, promises result in supplier delivery flexibility only when source has higher level of trust in suppliers. On the other hand, the results of our research show that noncoercive influence strategies (i.e. information exchange and recommendations) don't have significantly positive impact on supplier delivery flexibility. According to social capital theory, we argue that shared vision provides a referent frame of behavioral norms and common understanding of collective goals that

increases more complete argument structure to change the target's perception.

6.3. Managerial implications

Our research also has several managerial implications. First, the finding that request has a negative effect on supplier delivery flexibilities holds important implications for purchasing managers. A purchasing manager should consider the efficacy of request in influence attempts and anticipate the supplier's perception of a request when assessing the probability of compliance. A supplier is more likely to comply with requests that are uniquely relevant to achieving the supplier's goals than with requests that are not to advance their goals. It may be wise for a purchasing manager to alter a request to be more important or be relevant to the supplier's goals to enhance supplier delivery flexibilities.

Second, even though purchasing managers may use the similar promise strategy, not all suppliers will react equivalently in the same position. The finding shows that the use of the promise strategy under a high-level of trust may enhance the supplier's economic satisfaction and willingness to cooperate with the manufacturer to achieve delivery flexibility. We suggest that a purchasing manager should add promise strategy under high trust levels. However, when shared vision is high, promise strategy may reduce supplier delivery flexibilities. The findings suggest to purchasing managers that a mismatch of promise strategy and shared vision deters supplier from achieving delivery flexibility.

Third, our results indicate that the use of recommendation under high shared vision levels is effective. The recommendations focus on altering the target's perception and the manufacturer may provide recommendation actions that facilitate mutual advantages. Managerially, a purchasing manager should add this strategy to their repertoire under high shared vision. On the other hand, the use of recommendation under high trust levels is ineffective. A purchasing manager should understand that a mismatch of recommendation and trust might be possible to reduce supplier delivery flexibility.

Fourth, the use of noncoercive influence strategies to increase supplier delivery flexibility can't be beneficial under high level of trust. An unexpected, yet interesting finding is the negative association between delivery flexibility and noncoercive influence strategies (recommendations and information exchange) associated with trust. It appears that trust may hinder a manufacturer's information exchange and recommendations to prompt suppliers to coincide with the manufacturer's desired actions on delivery. Trust does not encourage the use of coercive influence strategies (Kim, 2000). Therefore, purchasing managers should understand that noncoercive influence strategies and trust have a substitutive effect on supplier delivery flexibility.

6.4. Limitations and further research

Future research could address several limitations of this study. First, because the research samples only consist of manufacturers, the results of a single investigation may have limited generalizability. However, this limitation should be tempered since every respondent was from a different firm. This study shares the manufacturers' perspective in examining the influence strategies used to attempt to enhance supplier delivery flexibility. The extent to that the supplier's perspective would yield similar results remains unknown. A clear understanding of the effects of the influence strategies on delivery flexibility could entail collecting data from manufacturers and suppliers. Second, the samples of this study were only Taiwanese firms. Taiwanese culture is high-context different from low-context culture of Western countries. Future studies could concentrate in greater detail on the difference of culture types and effects of influence strategies. Finally, this paper did not study the power position

between buyer and supplier relationships. Kale (1986) claimed that the greater the power of a manufacturer is, the more frequently it uses coercive strategies. By contrast, when the supplier has high power in a dyadic channel relationship, the manufacturer will attempt to avoid the use of coercive strategies (Frazier & Rody, 1991). Researchers justify the use of coercive influence strategies when the target is highly dependent on the source (Hu & Sheu, 2005; Payan & McFarland, 2005). Future studies can thoroughly examine the interfirm power structure and dependence level between the manufacturer and supplier. From a reciprocal action theory perspective, we can further consider the dyadic interplay of influence strategies (Kim, 2000). This means that the manufacturer's influence strategies may stimulate the dyadic exchange partner's use of the same ones. How would a supplier's reciprocal strategies affect the effectiveness of a manufacturer's influence strategies? Theoretically intriguing and practical questions such as this merit further study.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at [doi:10.1016/j.indmarman.2011.09.020](https://doi.org/10.1016/j.indmarman.2011.09.020).

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